

4.0 HCB/B(a)P Workgroup

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Workgroup Activities and the 4 Step Process

Progress Toward Challenge Goals

United States Challenge: “Seek by 2006, a 90 percent reduction nationally of high-level PCBs (>500 ppm) used in electrical equipment. Ensure that all PCBs retired from use are properly managed and disposed of to prevent accidental releases within or to the Great Lakes Basin.”

Canadian Challenge: “Seek by 2000, a 90 percent reduction of high-level PCBs (>1 percent PCB) that were once, or are currently, in service and accelerate destruction of stored high-level PCB wastes which have the potential to enter the Great Lakes Basin, consistent with the 1994 COA.”

The U.S. has taken steps toward the goal of seeking (unquantified) reductions of HCB and B(a)P releases to the Great Lakes Basin. Figure 4-1 illustrates approximate HCB emission reductions achieved in the U.S. from 1990 to 1997, by source category. Figure 4-2 presents estimated B(a)P emission reductions for the U.S. from 1990 to 1996, by source category.

Canada has made progress toward its goal of a 90 percent reduction in releases of HCB and B(a)P to the Great Lakes Basin. Based on the latest emission inventory estimates (base year ~1990), an approximate 60-90 percent reduction in HCB emissions and a 30-40 percent reduction in B(a)P emissions have been achieved in Canada.

Emission Inventories: Additional efforts have been made to resolve disputed hexachlorobenzene (HCB) emission levels from utility coal combustion and rubber tire manufacturing. A review of test data indicates that utility coal combustion does not appear to be a significant source of HCB, and the Rubber Manufacturers Association has performed testing which has shown that rubber tire manufacturing is not a source of HCB. Also, petroleum refinery benzo(a)pyrene (B(a)P) test data have been received that indicate that emissions from this source category may be lower than expected.

The USEPA Step 1 & 2 benzo(a)pyrene and hexachlorobenzene reports on sources and regulations and a Step 3 report on reduction options have been completed and posted on the GLBTS web site. In addition, a draft addendum to the HCB Step 1 and 2 report has been prepared to incorporate the 1996 National Toxics Inventory results. USEPA's 1996 National Toxics Inventory (NTI) was released around September 2000. This is especially significant because it was prepared using a “bottom-up” approach in which the States determined emission levels from sources located within their boundaries using a common set of emission factors that were used by all States. USEPA and the workgroup have been going through the 1996 NTI to check the accuracy of the HCB emission levels and to try to identify any emission reduction opportunities.

Draft HCB and B(a)P (including polycyclic aromatic hydrocarbons, or PAHs) release inventories for Ontario have been updated and circulated to CGLI workgroup members and affiliates for review and input. Little feedback has been received to date. The inventories will be updated later this year with



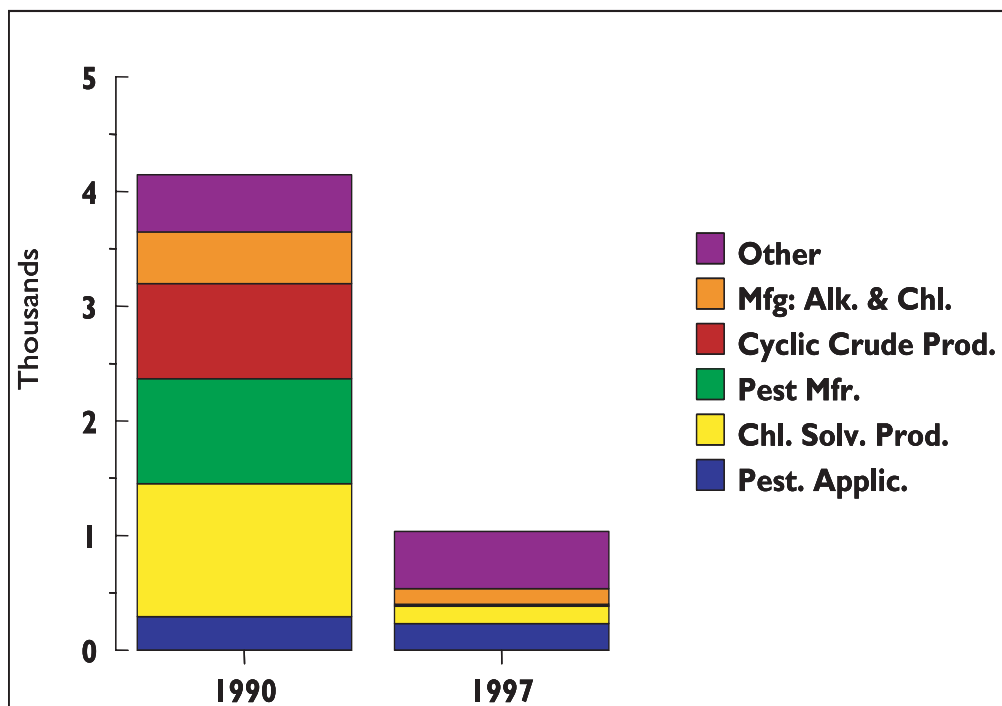


Figure 4-1. United States HCB Emissions, lbs/year

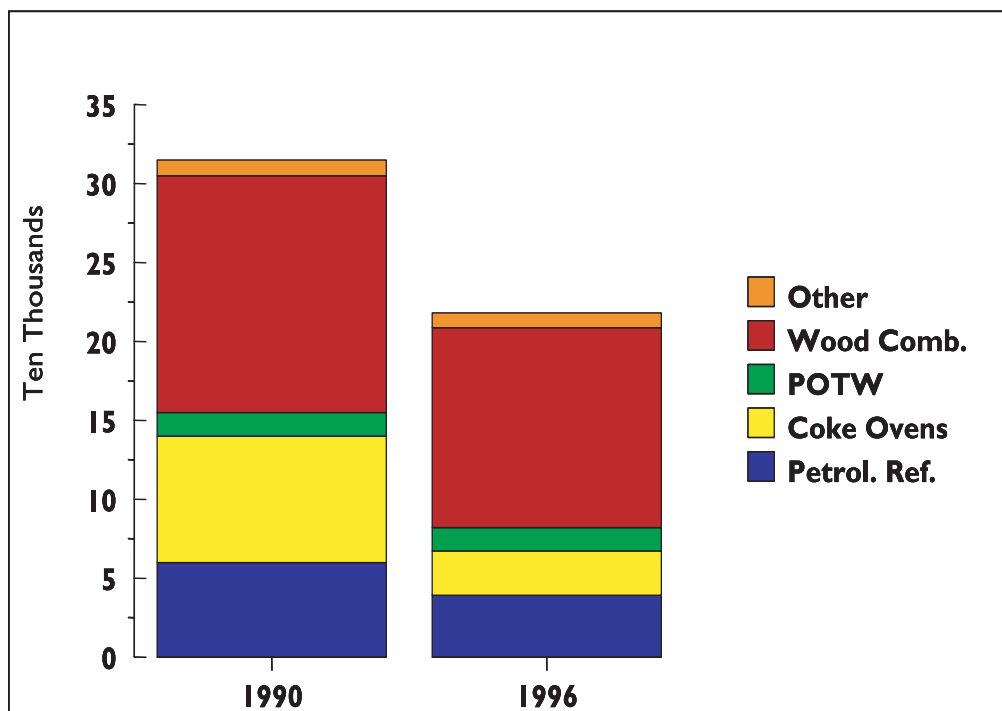


Figure 4-2. B(a)P Emissions from the States and Province around the Great Lakes, lbs/year



information already submitted under Canada's National Pollutant Release Inventory (NPRI) new reporting requirements (year 2000) for micro-pollutants.

A review is underway to confirm the current significance of trace HCB levels in some seven pest control products following manufacturers' initiatives over the last decade to reduce HCB levels. Up-to-date information on these trace HCB levels is critical to more accurately estimate HCB releases attributed to the use of these products. Current inventory information suggests that use of these pesticide products is one of the major HCB sources in the Great Lakes Basin. The HCB Workgroup has received assistance from the Pesticide Workgroup in assessing the HCB content of active pesticides and pesticide usage. Additional research has been done on the volatilization of HCB from pesticide application. Calculations based on HCB contaminant presence in products at regulatory levels would suggest HCB emissions from pesticide application at over 2000 lbs/year. However, manufacturers indicate that product HCB levels are much lower. Additional information is needed to establish probable release rates from this source. Since USEPA cannot disclose precise data because of restrictions imposed by the "Confidential Business Information" content of the information, industry might consider collecting the actual HCB contaminant levels in average lots shipped for each of the nine or ten pesticides with reportable contamination, and disclosing only the total quantity of HCB contaminant for the entire group for the latest year available. This would mask the contribution of any one pesticide.

Voluntary Stack Testing: Seven Ontario facilities have responded thus far to the call for voluntary stack testing (base-metal smelters, steel mill and foundry, hospital incinerators, cement plant). Testing has been completed at the Toronto Hospital for Sick Children, Falconbridge-Kid Creek, and Westcast Industries. Arrangements will be finalized to conduct testing at other sites.

Outreach: Millions of scrap tires burned in several catastrophic U.S. fires in 1999. The more than 800 million scrap tires accumulated in stockpiles throughout the U.S. are a potential threat to human

health and the environment. Tire fires are typically caused by wildfires, lightning strikes and arson. These fires are nearly impossible to extinguish and can burn for months, generating considerable air emissions, as well as groundwater contamination and oily runoff, of B(a)P/PAHs. The scrap tire managers for the Great Lakes States and the Scrap Tire Management Council were contacted to learn how each state is handling its scrap tires and potential ways that these fires can be minimized.

Reduction Activities

Wood Stoves: An extensive wood stove change-out program was held from February 1 through April 30, 2001, in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Nebraska, New York, North Dakota, Ohio, South Dakota and Wisconsin. The purpose of this program was to encourage people to turn in their older, pre-1992 wood stoves for newer wood stoves that meet USEPA standards, or for pellet or gas stoves. A wood stove change-out program is the most effective way to reduce B(a)P emissions from residential wood combustion because newer USEPA-certified stoves have only about 15 percent of the emissions of the older ones, which account for about 90 percent of existing wood stoves. The Great Wood Stove & Fireplace Change-out Program kicked off with media events in early February 2001 in St. Paul, Minnesota; Lansing, Michigan; and, Madison, Wisconsin, included demonstrations of clean burning gas stoves as well as old wood stoves and EPA-certified stoves. Press conferences announcing the event received television, radio, and newspaper coverage. The media events, and resulting news articles, informed the public of the environmental benefits of replacing older wood stoves with USEPA-certified wood stoves or gas stoves. At least 1,200 old stoves or stove inserts were replaced.

Similarly, in Ontario, a series of evening workshops was provided to communities around the Georgian Bay watershed from February 26 to March 22, 2001. This program accelerated the turnover of old wood stoves and inserts by educating the public about the environmental benefits of replacing old wood stoves and inserts and by providing financial incentives for the purchase of cleaner burning appliances.



This is an extremely important program because residential wood combustion contributes over 50 percent of the B(a)P emitted to the Great Lakes Basin. Persuading Great Lakes residents to turn in their old wood stoves and inserts for cleaner burning appliances, whether USEPA-certified wood stoves or gas or pellet burning appliances, is considered one of the most effective strategies for achieving reductions.

Voluntary Actions: In January 2001, an Environmental Management Agreement (EMA) between Environment Canada, Ontario Ministry of the Environment, and Algoma Steel (a major Ontario steel mill) was finalized and signed. Under the EMA, Algoma agreed to develop a facility-based approach to address environmental priorities. The project is similar to Dofasco's EMA and is expected to bring about significant reductions of priority substances, including B(a)P. Algoma will soon submit its second progress report under the EMA.

Standards Development and Implementation: Canada Wide Standards (release limits) have been developed for mercury, particulate matter, ozone, and benzene. CWS are being finalized for dioxins and furans. Implementation of CWS by the major source sectors and the province is expected to bring about HCB and B(a)P release reductions in the next 5-15 years.

Recommendations from two Strategic Option Reports for the iron and steel and wood preservation sectors are in place. Audits against the Codes of Good Practice have been conducted for all three pentachlorophenol (PCP) and creosote facilities in Ontario. Each facility is developing a 5-year implementation plan by December 2001, based on the audit assessment findings, to improve environmental performance. Codes of practice for the iron and steel sector are also being finalized for implementation by the Ontario steel mills.

A USEPA-proposed rule to control emissions of toxic air pollutants during hydrochloric acid production is expected to reduce HCB emissions.

Next Steps

Filling emission data gaps and obtaining voluntary reductions from major source sectors remain the challenges. A major part of the workgroup's focus in the coming year will be to accurately determine HCB emission levels from pesticide application as well as the extent to which HCB contaminant levels can, and are planned to, be reduced. Also, it will be extremely important to determine B(a)P emission levels from petroleum refinery fluid catalytic cracking units.



Great Blue Heron
Photograph by Don
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